

WHAT IS CLAIMED IS:

1. A lens system comprising:

a solid immersion lens having a spherical solid immersion lens portion and a body portion from which the solid immersion lens portion extends, at least the solid immersion lens portion being of a molded material; and

a meniscus type lens having a meniscus lens portion and a body portion from which the meniscus lens portion extends, at least the meniscus lens portion being of a molded material, the meniscus lens portion being defined by a convex surface and a concave surface, the concave surface being positioned about the spherical solid immersion lens portion in spaced relation thereto, the body portion of the meniscus type lens being supported in fixed position relative to the body portion of the solid immersion lens.

2. The lens system of claim 1, wherein each of the body portions of the solid immersion lens and the meniscus type lens is also of a molded material.

3. The lens system of claim 1, wherein the solid immersion lens portion and the body portion are of an integrally molded together material, the meniscus lens portion and the body portion being of an integrally molded together material.

4. A microscope comprising:

a housing;

a plurality of lenses arranged within the housing, the plurality of lenses including:

a solid immersion lens having a spherical solid immersion lens portion and a body portion from which the solid immersion lens portion extends, at least the solid immersion lens portion being of a molded material; and

a meniscus type lens having a meniscus lens portion and a body portion from

which the meniscus lens portion extends, at least the meniscus lens portion being of a molded material, the meniscus lens portion being defined by a convex surface and a concave surface, the concave surface being positioned about the spherical solid immersion lens portion in spaced relation thereto, the body portion of the meniscus type lens being supported in fixed position relative to the body portion of the solid immersion lens.

5. The microscope of claim 4, wherein one or more of the plurality of lenses in addition to the solid immersion lens and the meniscus type lens are formed of a molded material.

6. A microfluidic chip comprising:
a substrate having one or more channels formed in a surface thereof;
an imaging system including a microscope arrangement including the lens system according to claim 1.

7. The microfluidic chip of claim 6, wherein the solid immersion lens is integrally connected to an upper surface of the substrate, the lens portion of the solid immersion lens being aligned with one of the channels for imaging a sample in the one channel.

8. The microfluidic chip of claim 6, wherein the microscope arrangement has a height of about 10 cm.

9. A photo collection system comprising:
a photocounter;
optics for directing emitted photons to the photo counter; and
the lens system according to claim 1.

10. A method for imaging an object, the method comprising:

guiding the object along a passage defined by an integrally molded together solid immersion lens structure, the solid immersion lens structure defining a body portion, in which the passage is defined, and a solid immersion lens portion, the solid immersion lens portion being optically aligned with a portion in the passage;

positioning the object in the passage at the position which is optically aligned with the solid immersion lens so that the object is within a field of view extending through the solid immersion lens portion; and

viewing the object in the passage through a lens portion of a meniscus type lens and the solid immersion lens portion, the lens portion of the meniscus type having a convex surface and an opposing concave surface which defines a cavity that receives the solid immersion lens portion, the object being viewed while it is at the position in the passage which is optically aligned with the meniscus type lens portion and the solid immersion lens portion.